



# **Compliance Audit Report Public Version**

**South Mississippi Electric Power  
Association (SMEPA)  
NCR01315  
October 2, 2007**

**Confidential Information (including  
Privileged and Critical Energy Infrastructure  
Information) – Has Been Removed**

**November 19, 2007**

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## EXECUTIVE SUMMARY

This final compliance audit report is the public version. Confidential information (including privileged and critical energy infrastructure information) has been redacted from this report. The full final compliance audit report was submitted to the audited entity and NERC.

South Mississippi Electric Power Association (SMEPA) was audited on October 2, 2007 for compliance with the requirements contained in the NERC Reliability Operating Standards that are currently enforceable and apply to SMEPA's operation. This audit focused on documents and other evidence provided to SERC by the staff of SMEPA, and did not include any evidence obtained through system observation or inspection. The findings of the audit are based on the state of compliance at the time of the audit, and do not reflect past compliance activities or activities that will be completed in the future.

The audit was conducted by asking SMEPA staff to show valid evidence of meeting each individual requirement and sub-requirement contained in the 19 Operating standards that had been previously identified by SERC to SMEPA as subject to this audit. SMEPA staff would then cite specific portions of the evidence that demonstrated compliance. This evidence and the citations were documented and evaluated by the audit team for the level of compliance and agreement with the requirement. If all of the requirements and sub-requirements of an audited standard were met, then SMEPA was judged to be compliant. Likewise, if any of the requirements or sub-requirements were not fully met, then SMEPA was judged to have a possible violation of the standard. In other words, only a score of 100% is identified as compliant; 99% and below is a possible violation.

Evidence provided by SMEPA demonstrated compliance with all 19 audited standards.

As additional evidence of SMEPA's compliance with the audited Operating standards, SMEPA provided an overview of the devastation incurred by their systems from hurricane Katrina. Eighty-five percent of SMEPA's transmission lines were downed by the hurricane. The remaining fifteen percent were centrally located within the downed lines, rendering those portions of their system inoperable as well. As transmission lines were restored, SMEPA implemented their System Restoration Plans and, using their blackstart generating capability, began powering up their system from three separate islands. As power was restored within each island, interconnections with their systems, neighboring systems and the Eastern Interconnection were re-established. Full and successful restoration of their system was not the end of their reliability efforts, however. Immediately after system restoration, SMEPA began reviewing their processes to identify problems encountered during restoration and to update their plans with the lessons learned. As a result of their efforts, many of the documents reviewed by auditors had recent revisions to incorporate additional safeguards and strategies to improve their operations. Their communications systems have been revamped to provide better redundancy and more available methods of communication during a disaster. The actions taken, and timing of those actions, were readily apparent in their documentation and demonstrated a company-wide commitment to reliability.

## AUDIT PROCESS

### Objectives

All registered entities are subject to audit for compliance with all reliability standards applicable to the functions for which the registered entity is registered.<sup>1</sup> The audit objectives are:

- Independently review SMEPA's compliance with the requirements of the reliability standards that are applicable to SMEPA based on the SMEPA registered functions.
- Validate compliance with applicable reliability standards from the NERC 2007 Implementation Plan list of actively monitored standards.

### Scope

The scope of the audit of SMEPA was to look at all applicable operating-related standards in the NERC 2007 Compliance Monitoring and Enforcement Plan. SMEPA is registered with SERC as a Balancing Authority, Transmission Owner, Transmission Operator, Transmission Planner, Resource Planner, Distribution Provider, Generator Owner, Generator Operator, Load-Serving Entity, Purchasing and Selling Entity, Planning Authority and Reserve Sharing Group.

SERC sometimes audits planning-related and operating-related standards at different times to minimize impact on entity staff, and to recognize the somewhat seasonal availability of different staff groups. Operating Audits are generally held in the spring and fall of the year, and planning audits held in the middle of the year. Of the nineteen (19) operating standards that apply to SMEPA, all nineteen (19) were selected for review in this audit.

Note: For the 2007 compliance program, the monitoring period for the compliance audit will be the past 12 months or periods specified in individual reliability standards. The monitoring period is not limited to the time period for which penalties and sanctions are assessed.

### Methodology

The audit was conducted by reviewing all of the standards that apply to SMEPA in the NERC 2007 Compliance Monitoring and Enforcement Program that pertain to system operations. The audit was scheduled during normal business hours and standards were grouped to minimize imposition and make the most efficient use of SMEPA staff's time. SMEPA's staff had been briefed on the standards that were to be addressed so that documentation and evidence of compliance could be assembled.

The audit group was divided into two separate teams: one team of two auditors and a second team of three auditors. Each audit team had a moderator who would initiate dialogue on each standard requirement and request evidence of compliance. A second auditor served as a scribe to document the evidence presented, staff responses, and auditor comments. The entire audit team reviewed the evidence and questioned SMEPA staff to obtain sufficient understanding of the

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<sup>1</sup> North American Electric Reliability Corporation CMEP, paragraph 3.1, Compliance Audits

evidence and processes to enable a determination of compliance with standard requirements. This process was used to determine compliance with each individual requirement and sub-requirement of the nineteen (19) standards that had been previously identified by SERC to SMEPA as subject to this audit. SMEPA staff responded by providing evidence in the form of reports, procedures, policies, studies and other documents. SMEPA staff would then cite specific portions of the evidence that demonstrated compliance. This evidence and the citations were documented and evaluated by the audit team for the level of compliance and agreement with the requirement. Discrepancies between the requirement and the evidence provided were the subject of dialogue among the team members and SMEPA staff members until it could be agreed that each requirement was met by the cited evidence or other evidence offered. If it was felt that, after all evidence had been presented and discussed, SMEPA did not have sufficient evidence to support a finding of compliance, a possible violation was identified by the team and SMEPA staff.

### ***Company Profile***

South Mississippi Electric Power Association (SMEPA) is a non-profit cooperative which generates, transmits, and sells wholesale power to eleven member distribution cooperatives. These eleven Member systems own and maintain approximately 53,500 miles of distribution line and provide service to more than 390,000 members in 56 counties in Mississippi.

SMEPA and the eleven Member systems, who own the Association, are consumer-owned, non-profit businesses; therefore, SMEPA's rates reflect only the cost of supplying wholesale power to its rural electric systems.

SMEPA's operation of its utility system is done through several departments. The departments involved in the operation of SMEPA report to the Assistant General Manager. These departments include: the Engineering Department, the Power Supply Department, the Production Department, Corporate Information and Planning Department, Finance Department and the Transmission Operation Department.

The SMEPA Transmission system is located in the southeast quarter of the state of Mississippi (located in a general area below Interstate 20 and east of Interstate 55). The internal Control Area peak load is approximately 680 MW. The SMEPA transmission system has historically been summer peaking with the last system peak occurring on August 15, 2007 and reaching 1328 MW.

SMEPA is also responsible for hourly scheduling and delivery of resources to approximately 660 MW of peak load in the Entergy Control Area in the western half of Mississippi (located generally west of Interstate 55). The SMEPA transmission system interconnection points include:

- 161 / 115 kV 457 MVA interface with Entergy
- 230/161 kV 336 MVA interface with Southern Company
- 161 kV 334 MVA interface with AEC
- 161 kV 300 MVA interface with AEC, and

- 161 kV 299 MVA interface with TVA.

SMEPA has 83.4 miles of 230 kV lines, 345.2 miles of 161 kV lines, and 957.5 miles of 69 kV lines within the SMEPA system. SMEPA also owns a total of 227.3 miles of 115 kV lines within the Mississippi Power Company and Entergy Areas.

SMEPA owns and operates two manned generation facilities: Plant Morrow and Plant Moselle. Plant Morrow is a 400 MW coal-fired steam plant consisting of two 200 MW units. Plant Moselle is a 343 MW natural gas or oil fired steam plant consisting of three 59 MW steam units and two 83 MW combustion turbines. Also, SMEPA owns and operates two peaking units that have a combined rated output of 36 MW and are unmanned and operated remotely from SMEPA's Control Center. SMEPA also has 10% undivided interest (125 MW) in Entergy's Grand Gulf Nuclear Station. In addition, SMEPA also owns a 129 MW simple-cycle peaking station. Finally, SMEPA has a generation site that includes three 83 MW simple-cycle peaking units that connects to the Entergy Mississippi, Inc transmission system. SMEPA owns a total of 1282 MW of generation.

### ***Audit Specifics***

The compliance audit was conducted on October 2, 2007 at the SMEPA office in Hattiesburg, Mississippi.

### **Audit Team**

<b>Audit Team Role</b>	<b>Name</b>	<b>Title</b>	<b>Company</b>
Audit Team Leader	Ralph Anderson	Senior Compliance Auditor	SERC Staff
Member	Sam Stryker	Senior Compliance Auditor	SERC Staff
Member	James Harrell	Compliance Auditor	SERC Staff
Member	Mickey Bellard	Compliance Auditor	SERC Staff
Member	Tim Hattaway	Manager Energy Control Center	Alabama Electric Cooperative
Member	Roman Carter	Reliability Standards Coordinator	Southern Company Services
Member	Earl Shockley	NERC Regional Compliance Program Coordinator	NERC Staff

## AUDIT RESULTS

The audit began at 8:00 a.m., October 2, 2007 with an opening presentation by Ralph Anderson, SERC Senior Auditor and Audit Team Leader. He reviewed the NERC Compliance Monitoring and Enforcement Program for 2007 in general, and how it applied to SMEPA specifically. He introduced and reviewed the standards to be covered in the audit, and addressed both the expectations of SMEPA staff and the quality of evidence to be presented. He also covered the basic procedure for the audit, and the rules of conduct. Each member of the audit team was introduced and professional affiliations identified. The opening presentation was followed by an introduction of participating SMEPA staff, and an overview of SMEPA's operations, corporate organization and compliance activities by Gary Hutson.

The audit team initially reviewed the registration status of SMEPA with SMEPA staff to verify application of each standard. Each standard's audit began with a recitation of each requirement and an explanation, if requested by SMEPA. SMEPA staff would then present evidence of meeting this requirement, or cite evidence in material already presented to the team. At that point, the evidence was reviewed and dialogue took place until the team reached a point of satisfaction with the evidence. Consensual approval or concern was reached on each of the requirements and explained to SMEPA staff before proceeding to the next requirement. At that point, the team scribe would record the evidence presented to satisfy the requirement and the team's recommendation on that requirement using the Reliability Standard Auditor Worksheet (RSAW).

After completing a review of all applicable requirements in the standard, the overall compliance to that standard was reviewed first by the team and SMEPA staff, and then by the Audit Team Leader. Any concerns or dissention with the recommendation was offered, and the Audit Team Leader would indicate support or disagreement with the recommendation. Dialogue would ensue to the point of decision on the part of the Audit Team Leader. Following this review, the RSAW would be updated with the compliance recommendation.

The review of all applicable standards was completed around 3:30 p.m. and the audit team met to review and discuss the findings. At approximately 4:00 p.m., the audit team collected all notes and evidence as needed and began to finalize the RSAWs. The Audit Team Leader began to develop the Exit Briefing with the help of all team members, by using a projector connected to his laptop. This facilitated the consensus of the full team on the content of the Exit Briefing, and re-affirmed the team's findings and recommendations.

The Exit Briefing was presented to the assembled Audit Team and SMEPA staff at around 4:30 p.m., October 2, 2007 and was followed by an informal response from SMEPA staff. The Audit Team Leader solicited both informal comments from the SMEPA staff, and requested that they fill out formal feedback forms for submission to SERC and NERC. The Audit Team left the SMEPA meeting room at approximately 5:15 p.m., October 2, 2007.

**Findings**

<b>Reliability Standard</b>	<b>Auditor Notes</b>	<b>Finding</b>
BAL-001-0	R1. CPS 1 logs were reviewed for the last 12 months. As of 9/26/2007 the rolling 12 month CPS 1 average was 149.17. This exceeds all NERC requirements.  R2. CPS 2 logs were reviewed for the last 12 months. As of 9/26/2007 the previous 12 months were in compliance with CPS 2 for all months, with a range of 99.78 to 100, meeting all NERC requirements.  R3. SMEPA does not provide overlap regulation service.  R4. SMEPA does not receive overlap regulation service.	Compliant

Reliability Standard	Auditor Notes	Finding
BAL-002-0	<p>R1. SMEPA is a member of Southwest Power Pool (SPP) Services. Operating and Regulating Reserve Policy was provided.</p> <p>R2.1. Minimum reserve requirements are calculated on a daily basis. SPP screenshot provided minimum daily reserve requirement.</p> <p>R2.2. Based on load ratio share per SPP.</p> <p>R2.3. The SPP document requires 50% spinning and the non-spinning (10-minute) is 50%.</p> <p>R2.4. SMEPA Operating and Regulating Reserve Policy, dated 9/3/07.</p> <p>R2.5. Not applicable, no interruptible load is used.</p> <p>R2.6. Shown on portal screenshot, calculated daily.</p> <p>R3 &amp; R3.1. SMEPA provided six quarterly reports from SPP that covered DCS events and that showed sufficient reserves to cover all DCS events. Available resources were shown on the screenshot. It was verified that available resources were greater than the reserve requirement. Plan was modified and updated on 9/3/07.</p> <p>R4. Evidence Cited to show that SMEPA meets this requirement: A recovery time of 13.5 minutes for one reportable DCS event on 1/5/07 was shown; a loss of 172 MW from a 200 MW unit. Threshold was 160 MW for this type of event.</p> <p>R5. Requirement Applies to SMEPA as currently registered as a Balance Authority that responded to its own disturbance. Evidence Cited to show that SMEPA meets this requirement: A recovery time of 13.5 minutes for one reportable DCS event on 1/5/07 was shown; a loss of 172 MW from a 200 MW unit. Threshold was 160 MW for this type of event.</p> <p>R6. SMEPA has a 1970 vintage contract with MPCo/SOCO for reserve coverage. Protective Capacity is covered under article 5, Section 5.2 that provides up to 200 MW continuously.</p>	Compliant

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<b>Reliability Standard</b>	<b>Auditor Notes</b>	<b>Finding</b>
BAL-003-0	<p>R1. SMEPA provided a 2007 Frequency Bias data request and a frequency response reply e-mail to SERC as evidence of compliance with the requirement.</p> <p>R2. SMEPA uses 1% of load as required in R5. They provided a spreadsheet documenting a River Bend Trip Disturbance on 4-15-06 that provided the foundation for FRC yearly determination. SMEPA also showed the Frequency Bias Data Request for 2007 from SERC.</p> <p>R3. SMEPA provided a spreadsheet showing the AGC Mode being in tie line frequency bias mode.</p> <p>R4. SMEPA has jointly-owned units with Entergy, and uses a pseudo-tie. They provided a spreadsheet documenting the River Bend Trip Disturbance, April 15, 2006 that provided the foundation for the NERC FRC Survey yearly determination that contained the pseudo-tie. Entergy has confirmed that the joint ownership is not resulting in the response being double counted.</p>	Compliant

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Reliability Standard	Auditor Notes	Finding
CIP-001-1	<p>R1. Sabotage plan provided covers physical and cyber occurrences. Plan has initialization date, but does not include an approval signature. Created in 2004, revised in September 2007. Pages 1 &amp; 2, Section 2.1, define malicious intent. Appendix A, Pages 12 &amp; 13 define sabotage events. Page 8 details physical events. The document was created in 2004 and revised per the revision table. Generator Operator/Load-Serving Entity employees are involved.</p> <p>R2. Procedure covered all required parties including: internal Page 8, external Page 16, and included a cyber incident form. Plan includes communications within SMEPA organization, local authorities, FBI, and external communications with Reliability Coordinator and adjacent Balancing Authorities/Transmission Operators. Cyber training is provided to plant personnel. Reviewed checklist and cyber incident form.</p> <p>R3. The procedure covers all functions Generator Operator, Load-Serving Entity, Transmission Operator, and Balancing Authority. Operators are all required to call the control center in the event of an incident. Page 8, of the section contained within the Operations Manual, indicates that each operator has a copy of the manual. Operator's Manual was confirmed to be available on the Operator's desk.</p> <p>R4. The procedure provided indicates the requirement was met on Pages 16, 8, and in Appendix C on Page 17. Contact was established through FBI academy program; Appendix B, Page 16, and flow chart Page 4. Verified the date when Chris Decker made contact with FBI. Chris has a certificate with date of attending FBI training. Page 17 of Appendix C contains the contact names of two FBI officials. They provided a training log for ES/ISAC, indicating that employees attended and discussed calling Control Center for all incidents.</p>	Compliant
CIP-002-1 through CIP-009-1	Standards apply to SMEPA but were not assessed in this audit.	Not Assessed

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Reliability Standard	Auditor Notes	Finding
COM-001-1	<p>R1. Landline, hot-line, satellite, cell phone, Southern phones, satellite internet.</p> <p>R.2. Test all critical sites annually. Technicians have an inspection/maintenance test sheet that documents testing. Emergency equipment, such as Global Star satellite phone, is also tested at least once a year. Network management system monitors microwave sites. The system has been active for two years. Major alarms routed to the Control Center and minor alarms are logged for technicians to review the next day. Communications check list was observed to indicate that items were tested on an annual basis. Reviewed example test of Global star satellite phones. Alarm log screen shot September 10, 2007 (checked daily, am). Provided documentation of satellite phone system tests. Reviewed Screens shot SMNPC (monitors micro-wave).</p> <p>R.3. SMEPA participates in SERC telecom subcommittee. Two reps from SMEPA attend meetings. Three-way project among AEC, SCS, and SMEPA for the SERC hot-line. Contact numbers for SMEPA are posted on the SERC portal.</p> <p>They showed adequate coordination on the NERC and SERC level as well as projects like the HOTLINE as evidence. Their plan included Southern link phones and satellite phones.</p> <p>R4. English is used as the language for all communications among SMEPA operating personnel responsible for the real-time generation control and operation of interconnections.</p> <p>R5. Reviewed Control system disaster scenarios created September 13, 2004, updated and formatted through May 2007. There are written operating instructions and procedures to enable continued operation of the system during the loss of telecommunication facilities. The procedure was created on August, 2007 and revised in September. Prior to this it was addressed in training and there was agreement that the employees would follow what they were trained for. In other words, the August document formalized the existing verbal/training procedures. Evidence was adequate that they could perform duties indefinitely from BCC.</p> <p>R6. SMEPA is not a NERC Net user.</p>	Compliant

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<p>EOP-001-0</p>	<p>R.1. Reviewed several SMEPA agreements with AEC, Southeastern RC, Entergy, SCS, TVA, OPC, Arkansas Electric, Southern Illinois, and Big Rivers. An interconnect agreement exists, but no emergency power agreement exists with TVA due to the legislation that prevents purchases from TVA.</p> <p>R2. No IROLs identified on SMEPA system per letter from Corbin, their Reliability Coordinator. Reliability Coordinator's definitions have been given to them.</p> <p>R3.1. Capacity Plan has three alert level steps. Plan was updated on June 21, 2007, which is their annual review of the plan, and contained member systems' updated information on loads, etc. Member Systems have load reduction schedules within the plan. Entity provided extensive manual of procedures.</p> <p>R3.2. 2007 Summer Operating Study details contingency studies. Each operator and the Reliability Coordinator receive a copy of the plan. 2007 Summer Operating study was used to provide evidence that the most severe contingencies were reviewed and the plan is to mitigate these contingencies.</p> <p>R3.3. Load Shed Plan - Operators have a list of breakers that can be opened by supervisory personnel to drop ~ 148 MW. UFLS plan uses 10% steps as specified in the SERC supplement. Total UFLS load shed is 30.07%. Entity utilizes the information provided in document for requirement 3.1, plus provided the manual load shedding scheme utilized.</p> <p>R3.4. System Restoration Plan – SMEPA System Blackstart Plan. Cranking paths are included in the plan. The GOPs system restoration plan is document provided for 3.1; They provided the blackstart plan, which had been updated on May 2007 to include TVA information.</p> <p>R4.1, 4.2 &amp; 4.3. Plan instructs employees to man key facilities and to communicate with the Reliability Coordinator. Their Emergency Response Plan also contains this information. The capacity and emergency plan includes communication procedures from three different sources: 3.1, restoration plan, and Emergency response plan. Plan identifies tasks to be coordinated with adjacent Transmission Operators and Balancing Authorities.</p> <p>R4.4. Teams assigned and their assigned tasks are provided in Emergency Response Plan. Staffing levels – organization charts showing operation teams were presented.</p> <p>R.5. All applicable elements were evident in their plan.</p> <p>R6. They provided information from the SERC site showing where their plan resides and that everyone can review. Also, provided letter to Corbin (southeastern Reliability Coordinator) providing the Blackstart and Capacity and emergency plans. Plans were posted on the SERC portal and copies were sent to Reliability Coordinator.</p>	<p>Compliant</p>
<p>Page 13</p>	<p>R7. SMEPA provided all required information for this requirement.</p>	<p>SMEPA Compliance Audit Report November 19, 2007</p>

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EOP-003-1	<p>R1. SMEPA Energy Deficiency, Public appeal and Rolling Blackout Action Plan dated June 21, 2007 outlines procedures, but no events have triggered the use of this plan.</p> <p>R2. Underfrequency Data FINAL.doc and Underfrequency Data Summary were submitted showing setpoints and load levels for UFLS.</p> <p>R3. Capacity and Energy Emergency Plan-Tab1.pdf and ERP-SERC submittal Screenshot.</p> <p>R4. SMEPA follows SERC guidelines in the supplement on UFLS as shown on their Underfrequency Scheme Summary.</p> <p>R5. Capacity and Energy Emergency Plan-Tab1.pdf. 2007 Underfrequency Data FINAL.doc. Manual Remote Load Shed 2007, Tab 4.</p> <p>R6. SMEPA follows the SERC Supplement as shown by ERP-SERC submittal Screenshot.</p> <p>R7. SMEPA Meets this requirement: Capacity and Energy Emergency Plan-Tab1.pdf.</p> <p>R8. SMEPA meets the requirement: Capacity and Energy Emergency Plan-Tab4.pdf.</p>	Compliant
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EOP-005-1	<p>R1. Plans are posted on the SERC portal. All elements in attachment 1 were found in the plan. Some of the information was from previous sources under EOP 001, but they had an extensive plan that was presented to us and which is also located on the SERC website.</p> <p>R2. Plan is reviewed and revised and training is provided annually. Revision was made in 2007 plan due to new tie with TVA. Yearly plan, 2006, training is performed; added TVA ties as minimum and Sylveraena generators.</p> <p>R3. Reviewed their blackstart procedure. Demonstrated from their restoration plan. Page 8 in plan states interconnect with neighbor soon as neighboring system &amp; Reliability Coordinator give approval.</p> <p>R4. Met this requirement by using the posted procedure provided on the SERC website. This is their means of coordination other than the notification to Corbin (Southeastern Reliability Coordinator). Team reviewed Screen shot of SERC portal and e-mail to Corbin. Fed-Ex receipt provided for hard copy.</p> <p>R5. Tests are performed on the telecommunication equipment annually at a minimum. Test reports were provided on telecom equipment. Team reviewed step by step Communication Annual Checklist.</p> <p>R6. Provided lesson plan for Blackstart and EOP training. Last annual training conducted on May 21 and May 23, 2007. Total training exceeded minimum. Reviewed training report for May 21 &amp; 23 training on system restoration plan; all operators signed off on attendance sheet. Reviewed example of test, completed and signed May 21, 2007 and May 23, 2007.</p> <p>R7. Simulations performed annually. Actual testing was done in 1998 and since that time simulations and drills were used.</p> <p>R8. SMEPA tested all blackstart units in 2007. SMEPA has three different units using six different paths. SERC requires one unit per year.</p> <p>R9. Blackstart plan was presented showing cranking paths and switching required for six different paths. The plan has cranking paths in detailed appendix.</p> <p>R10. Test logs for each unit were provided. Blackstart Test log for each unit with (start time, stop time, duration of test, parameters and run time within performance).</p> <p>R11. Blackstart Plan contains Reliability Coordinator language Page 4 and 8. {(Page 4 -5) (Page 8 Interconnecting with Neighboring utilities)}.</p> <p>R11.2. Page 8 contains the statement for this requirement.</p> <p>R11.4. SMEPA does not have any nuclear on their system.</p>	Compliant
Page 15	R11.5. No events have occurred in 2007 (not applicable)	

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EOP-006-1	Not applicable – SMEPA is not a Reliability Coordinator.	NA
EOP-008-0	<p>R1.1. Backup Communication Guide v1.1 dated May 31, 2007.</p> <p>R1.2. Manual Daily Report Form.xls and Manual Interchange form.xls.</p> <p>R1.3. SMEPA has no facilities that are named as Interconnection Critical by NERC. SMEPA Control System Recovery Plan V2.2 and Operating Procedure for SMEPA Control System Disasters identify SMEPA facilities that are judged by the entity to be critical.</p> <p>R1.4. SMEPA CONTROL CENTER COMMUNICATIONS PROCEDURE FOR LOSS OF VOICE COMMUNICATIONS dated September 26, 2007.</p> <p>R1.5. 2007 Energy Emergency Alerts. Back-up Control Center Activation dated May 9, 2007.</p> <p>R1.6. SMEPA Annual Continuous Training Plan June 6, 2007.</p> <p>R1.7. SMEPA Annual Continuous Training Plan, Page 2 dated 6/6/07, and the revision record in the Control Center System Disaster Scenarios.</p> <p>R1.8. It takes only 20 minutes to relocate to BUCC. This requirement is not applicable.</p>	Compliant
EOP-009-0	<p>R1. Test logs from Blackstart units were provided.</p> <p>R2. Provided all needed information with adequate details</p>	Compliant
FAC-003-1	Applies to SMEPA, but not within scope of this operating audit.	NA
FAC-008-1	Applies to SMEPA, but not within scope of this operating audit.	NA
FAC-009-1	Applies to SMEPA, but not within scope of this operating audit.	NA
IRO-001-1	<p>R1. Security Coordination Agreement for the Southern Sub-Region of SERC.pdf and dated October 22, 2004. System Operator Authority and Board Resolution.</p> <p>R2, R3, R4, R5, R6 and R7 – SMEPA is not a Reliability Coordinator, requirements do not apply.</p> <p>R8. Resolution of the Board of Directors dated October 22, 2004, and there have been no directives, but a system operator log shows that they are following instructions.</p> <p>R9. SMEPA is not a Reliability Coordinator, not applicable.</p>	Compliant

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IRO-004-1	<p>R1. Not applicable.</p> <p>R2. Not applicable.</p> <p>R3. Not applicable.</p> <p>R4. Daily e-mail sent to Reliability Coordinator with load, schedules, and unit dispatch data. Real-time data is processed through ICCP for generation &amp; transmission which is made available every four seconds. Showed sample daily e-mail showing load forecast, purchases, sales, and hourly generator output. For real-time, info is sent and updated every four-six seconds. Reviewed evidence sent daily by e-mail.</p> <p>R5. Not applicable</p> <p>R6. Not applicable</p> <p>R7. Agreements recognizing (Reliability Coordinator) Security Coordinator. No directives have been issued to SMEPA</p>	Compliant
IRO-014-1	Not applicable SMEPA is not a Reliability Coordinator.	NA
IRO-015-1	Not applicable SMEPA is not a Reliability Coordinator.	NA
IRO-016-1	Not applicable SMEPA is not a Reliability Coordinator.	NA

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PER-002-0	<p>R1. Annual Continuous Training Plan.doc and 2007 Training Summary also, System Operator Updated 07-2007_shm 2.2 Essential Job Functions B, Supervisor of Operations and Director of Operations.</p> <p>R2.1. Continuous Training Plan.doc, SMEPA Trainee Checklist.doc, 2007 Training Summary.doc, NERC Operator list.doc, New Operator Training Plan.doc, Lead System Operator Job description 04-05, System Operator Job Description Updated 07-2007_shm 2.2, Essential Job Functions B, also Supervisor of Operations and Director of Operations.</p> <p>R2.2. System Operator Updated 07-2007_shm 2.2 Essential Job Functions B, also Supervisor of Operations and Director of Operations.</p> <p>R3.1. SOS EOPS Course Objectives and the Annual Plan for Continuous Training 6/6/07. Lesson plans were shown. SMEPA operators attend the SERC Operator Training, hard copies of operator attendance shown. System operator training checklist revised August 20, 2007.</p> <p>R3.2. Annual Plan for Continuous Training 6/6/07. New Operator Training Plan 6/6/07.</p> <p>R3.3. Previous Year and Current Year Work Schedules were shown that documented the training activity time. 2006 SMEPA Training Hours Report.</p> <p>R3.4. Lead system Operator Essential Job Functions List.</p> <p>R4. Annual Plan for Continuous Training 6/6/07 and SMEPA Training Hours Report.</p>	Compliant
PER-003-0	<p>R1.1. Hard and electronic copies of NERC System Operator Certification Certificates for Reliability for all operating positions</p> <p>R1.2. SMEPA Job Descriptions for System Operator, Lead System Operator, Supervisor of Operations, and Director of Operations.</p>	Compliant
PER-004-1	Not applicable – SMEPA is not a RC.	NA
PRC-004-1	Applies to SMEPA but not within scope of this operating audit.	NA
PRC-005-1	Applies to SMEPA but not within scope of this operating audit.	NA
PRC-008-0	Applies to SMEPA but not within scope of this operating audit.	NA
PRC-010-0	Applies to SMEPA but not within scope of this operating audit.	NA
PRC-011-0	Applies to SMEPA but not within scope of this operating audit.	NA
PRC-016-0	Applies to SMEPA but not within scope of this operating audit.	NA
PRC-017-0	Applies to SMEPA but not within scope of this operating audit.	NA
PRC-021-1	Applies to SMEPA but not within scope of this operating audit.	NA

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TOP-003-0	<p>R1. SMEPA has one spreadsheet that contains all outage information (transformers, lines, generation) that is sent every Wednesday by noon. Entity sends weekly e-mail to the Reliability Coordinator every Wednesday before 12:00 p m. central. Reviewed and verified evidence from sent mailbox.</p> <p>R2. Capacitor Banks all reside on the 69 kV systems. Spreadsheet would be used for instances of extended AVR outages or special case email would be used. SMEPA goal is to have AVR in-service 100% of the time. (Document provided indicating that 69kv systems do not contain equipment).</p> <p>R3. E-mail correspondence of telemetry equipment testing/outages with neighbors. E-mail examples provided include: January 1,2006 and March 27, 2007 telemetering coordination with AEC, Miss Power.</p> <p>R4. Entity has documentation as resolution. Reviewed evidence that the entity has a resolution agreement with Reliability Coordinator. No evidence of any existing conflicts.</p>	Compliant
TOP-004-1	<p>R1. N/A – There have been no IROLs or SOLs.</p> <p>R2. Summer Operating Study looks at most severe contingency. SMEPA lists 121 contingencies and of those no stability issues were identified for a single contingency on the system.</p> <p>R3. Annual transmission study looks out several years and looks at cascading outage possibility. SMEPA states 2007 Annual Transmission Study found no issues; Page 9, Planning study. None identified in multiple or extreme contingency studies; Assessment, Page 9 of SMEPA annual transmission study.</p> <p>R4. N/A.</p> <p>R5. SMEPA has not initiated any manual separation from the interconnection.</p> <p>R6. SMEPA has a Joint Policies and Coordination document that was initiated Dec 2000 covering the requirements. Policy is in the Operator’s Manual.</p>	Compliant

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TOP-005-1	<p>R1. E-mail from the Reliability Coordinator stating he is receiving all of the required data to perform the analysis. The Reliability Coordinator is also receiving all real-time data through ICCP for power flows. Data is available every ten seconds. Reliability Coordinator receives ~806 real-time data points on SMEPA system. Reviewed ISN format of real-time information that is currently being provided to Reliability Coordinator August 1, 2007 as evidence. Reliability Coordinator verified via e-mail that this is satisfactory (June 7, 2007).</p> <p>R2. N/A – We were shown Reliability Coordinator’s info from the ISN.</p> <p>R3. A request from TVA for data was reviewed and corresponding e-mails for the object ids. This request came June 29 2007 as a result of the new inter-tie with TVA. No other request for real-time data has been received by SMEPA. Standard ICCP protocol; reviewed evidence to TVA. Reviewed evidence of e-mails approving format.</p> <p>R4. The Purchase-Selling Entity, Balancing Authority, and Transmission Operator are performed by the same function and therefore are receiving the required information.</p>	Compliant
TOP-007-0	<p>R1. The Reliability Coordinator has sent e-mail to SMEPA stating that they have not had an SOL or an IROL. Since the Reliability Coordinator has access to the same data (EMS, ICCP) the Reliability Coordinator would know at the same time as SMEPA, Transmission Operator, any IROL or SOL that would occur. By the letter sent by the Reliability Coordinator, there have been none. There was an internal memo requesting operators to report any SOLs or IROLs. (Aug 7, 2007 Reliability Coordinator e-mail stating that no IROL/SOL elements have been identified by the Reliability Coordinator. Memo to System Operators pertaining to actions for IROL/ SOL limits.)</p> <p>R2. There have been no IROLs.</p> <p>R3. There have been no IROLs.</p> <p>R4. SMEPA is not a Reliability Coordinator – Not applicable.</p>	Compliant
TPL-001-0	Applies to SMEPA but not within scope of this operating audit.	NA
TPL-002-0	Applies to SMEPA but not within scope of this operating audit.	NA
TPL-003-0	Applies to SMEPA but not within scope of this operating audit.	NA
TPL-004-0	Applies to SMEPA but not within scope of this operating audit.	NA

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<p>VAR-001-1</p>	<p>R1. SMEPA Operations Manual for Generation Control and Operation – Reactive Reserve Policy (Appendix B); Security Coordination Agreement for the Southern Sub-Region of SERC (2); SMEPA-MPCO Interconnection Agreement; Interconnection Agreement Between AEC and SMEPA - Amendment, Section 4.04; Interconnection Agreement between MS Power &amp; Light &amp; SMEPA, Section 4.06; Interconnection Agreement Between TVA and SMEPA.</p> <p>R2. SMEPA Operations Manual for Generation Control and Operation, Appendix B; 2006 SMEPA Transient Stability Study, 2007 Summer Operations Study, and snapshots of inter-ties showing VAR flows with reactive reserves.</p> <p>R3.1. No generator connected to the BES on SMEPA is exempt per SMEPA Operations Manual for Generation Control and Operation.</p> <p>R3.2. None are exempted.</p> <p>R4. SMEPA Operations Manual for Generation Control and Operation, Section 2.2 and Appendix B dated 6/13/07.</p> <p>R5. SMEPA provides VARs in their transmission area, and Entergy provides ancillary services for the lines in Entergy's transmission area under the OATT.</p> <p>R6 &amp; R6.1. SMEPA Operations Manual for Generation Control and Operation, Appendix B; 2006 SMEPA Transient Stability Study, 2007 Summer Operations Study, and snapshots of inter-ties showing VAR flows with reactive.</p> <p>R7. SMEPA Operations Manual for Generation Control and Operation, Appendix B, Page 11; 2006 SMEPA Transient Stability Study, 2007 Summer Operations Study, and snapshots of inter-ties showing VAR flows with reactive reserves.</p> <p>R8. SMEPA Operations Manual for Generation Control and Operation, Appendix B, Page 11; 2006 SMEPA Transient Stability Study, 2007 Summer Operations Study, and snapshots of inter-ties showing VAR flows with reactive reserves.</p> <p>R9. SMEPA System Diagram showing capacitor banks and screen shots of current system conditions.</p> <p>R10. SMEPA has not had any IROL or SOL events resulting from reactive resource deficiencies, confirmed by the RC. Requirement is event driven.</p> <p>R11. There are no non-SMEPA generators on the SMEPA BES.</p> <p>R12. SMEPA has not had any voltage collapse events resulting from reactive resource deficiencies, confirmed by the Reliability Coordinator. Requirement is event driven.</p>	<p>Compliant</p>
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### ***Conclusions***

South Mississippi Electric Power Association was audited on 19 monitored Operating standards identified as being applicable to SMEPA as a Balancing Authority, Transmission Owner, Transmission Operator, Transmission Planner, Resource Planner, Distribution Provider, Generator Owner, Generator Operator, Load-Serving Entity, Purchasing and Selling Entity, Planning Authority and Reserve Sharing Group. The Audit Team determined that SMEPA is in compliance with all of the audited standards.

## SUMMARY OF SMEPA RESPONSE TO THE AUDIT FINDINGS

On Friday, November 16, 2007 4:41PM, an e-mail was sent to James Harrell and Bob Goss and copied to [REDACTED], with a subject of: RE: SMEPA Draft Audit Report. The e-mail stated:

“We found no issues with the draft audit report for SMEPA. Let me know if you need any additional information.

Thanks,

[REDACTED], PE

South Mississippi Electric Power Association  
Supervisor of Operations Planning

[REDACTED]  
”

## APPENDIX 1 — APPLICABLE RELIABILITY STANDARDS

Std #	Requirements	Standard	Who	Purpose	Monitoring Timeframe	Applicable to SMEPA Yes or No
BAL-001-0	All	<b>Real Power Balancing Control Performance</b>	BA	To maintain Interconnection steady-state frequency within defined limits by balancing real power demand and supply in real-time.	The data that supports the calculation of CPS1 and CPS2 (Attachment 1-BAL-001-0) are to be retained in electronic form for at least a one-year period. If the CPS1 and CPS2 data for a Balancing Authority Area are undergoing a review to address a question that has been raised regarding the data, the data are to be saved beyond the normal retention period until the question is formally resolved. Each Balancing Authority shall retain for a rolling 12-month period the values of: one-minute average ACE (ACEi), one-minute average Frequency Error, and, if using variable bias, one-minute average Frequency Bias.	Yes
BAL-002-0	All	<b>Disturbance Control Performance</b>	BA, RSG, RRO	To ensure the Balancing Authority is able to utilize its Contingency Reserve to balance resources and demand and return Interconnection frequency within defined limits.	Compliance for DCS will be evaluated for each reporting period. Reset is one calendar quarter without a violation.  The data that support the calculation of DCS are to be retained in electronic form for at least a one-year period.	Yes
BAL-003-0	All	<b>Frequency Response and Bias</b>	BA	This standard provides a consistent method for calculating the Frequency Bias component of ACE.	Yearly or by request.	Yes

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CIP-001-1	All	<b>Sabotage Reporting</b>	RC, BA, TOP, GOP, LSE	Disturbances or unusual occurrences, suspected or determined to be caused by sabotage, shall be reported to the appropriate systems, governmental agencies, and regulatory bodies.	By request and any events in the last year.	Yes
CIP-002-1 through CIP-009-1	All	<b>Critical Infrastructure Protection Standards</b>	BA, GO, GOP, IA, LSE, NERC, RC, RRO, TO, TOP, TSP	Cyber Security Standards- Follow revised Implementation Plan for Cyber Security Standards CIP-002-1 through CIP-009-1	By request.	Yes
COM-001-1	R2 and R5	<b>Telecommunications</b>	TO, BA, RC, NERCNet User Organizations.	Each Reliability Coordinator, Transmission Operator and Balancing Authority needs adequate and reliable telecommunications facilities internally and with others for the exchange of Interconnection and operating information necessary to maintain reliability.	By request.	Yes
EOP-001-0	All	<b>Emergency Operations Planning</b>	BA, TOP	Each Transmission Operator and Balancing Authority needs to develop, maintain, and implement a set of plans to mitigate operating emergencies. These plans need to be coordinated with other Transmission Operators and Balancing Authorities, and the Reliability Coordinator.	By request.	Yes

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EOP-003-1	All	<b>Load Shedding Plans</b>	BA, TOP	A Balancing Authority and Transmission Operator operating with insufficient generation or transmission capacity must have the capability and authority to shed load rather than risk an uncontrolled failure of the Interconnection.	R1, R5, R6 - Event Driven. Has an event occurred in the past year?  R2, R3, R4, R7, R8 – By request.	Yes
EOP-005-1	All	<b>System Restoration Plans</b>	BA, TOP	To ensure plans, procedures, and resources are available to restore the electric system to a normal condition in the event of a partial or total shut down of the system	By request. Note: entity must follow the timelines specified in the standard: show that the plan is reviewed annually; simulation or testing must be done every five years.	Yes
EOP-006-1	All	<b>Reliability Coordination – System Restoration</b>	RC	The Reliability Coordinator must have a coordinating role in system restoration to ensure reliability is maintained during restoration and priority is placed on restoring the Interconnection.	By request.	NA
EOP-008-0	All	<b>Plans for Loss of Control Center Functionality</b>	BA, RC, TOP	Each reliability entity must have a plan to continue reliability operations in the event its control center becomes inoperable.	By request.	Yes
EOP-009-0	All	<b>Documentation of Blackstart Generating Unit Test Results</b>	GO, GOP	To ensure that the quantity and location of system blackstart generators are sufficient and that they can perform their expected functions.	By request. Note entity must meet testing frequency specified in EOP-007-0.	Yes

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FAC-003-1	All	<b>Vegetation Management</b>	RRO, TO	To improve the reliability of the electric transmission systems by preventing outages from vegetation located on transmission rights-of-way (ROW) and minimizing outages from vegetation located adjacent to ROW, maintaining clearances between transmission lines	By request – program documentation and last four quarterly outage reports.	Yes
FAC-008-1	All	<b>Facility Ratings Methodology</b>	GO, TO	To ensure that Facility Ratings used in the reliable planning and operation of the Bulk Electric System (BES) are determined based on an established methodology	By request the current methodology and any superseded portions of the methodology within the past 12 months.	Yes
FAC-009-1	All	<b>Establish and Communicate Facility Ratings</b>	GO, TO	To ensure that Facility Ratings used in the reliable planning and operation of the Bulk Electric System (BES) are determined based on an established methodology or methodologies.	By request.	Yes

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Std #	Requirements	Standard	Who	Purpose	Monitoring Timeframe	Applicable to SMEPA Yes or No
IRO-001-1	All	<b>Reliability Coordination – Responsibilities and Authorities</b>	BA, GOP, LSE, PSE, RC, RRO, TOP, TSP	Reliability Coordinators must have the authority, plans, and agreements in place to immediately direct reliability entities within their Reliability Coordinator Areas to re-dispatch generation, reconfigure transmission, or reduce load to mitigate critical conditions to return the system to a reliable state. If a Reliability Coordinator delegates tasks to others, the Reliability Coordinator retains its responsibilities for complying with NERC and regional standards. Standards of conduct are necessary to ensure the Reliability Coordinator does not act in a manner that favors one market participant over another.	By request.	Yes
IRO-004-1	All	<b>Reliability Coordination — Operations Planning</b>	BA, GO, GOP, LSE, RC, TO, TOP, TSP	Each Reliability Coordinator must conduct next-day reliability analyses for its Reliability Coordinator Area to ensure the Bulk Electric System can be operated reliably in anticipated normal and Contingency conditions.	By request.	Yes

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IRO-014-1	All	<b>Procedures, Processes, or Plans to Support Coordination Between Reliability Coordinators</b>	RC	To ensure that each Reliability Coordinator's operations are coordinated such that they will not have an Adverse Reliability Impact on other Reliability Coordinator Areas and to preserve the reliability benefits of interconnected operations.	By request.	NA
IRO-015-1	All	<b>Notifications and Information Exchange Between Reliability Coordinators</b>	RC	To ensure that each Reliability Coordinator's operations are coordinated such that they will not have an Adverse Reliability Impact on other Reliability Coordinator Areas and to preserve the reliability benefits of interconnected operations.	Rolling 12 months of information provided on request.	NA
IRO-016-1	All	<b>Coordination of Real-time Activities Between Reliability Coordinators</b>	RC	To ensure that each Reliability Coordinator's operations are coordinated such that they will not have an Adverse Reliability Impact on other Reliability Coordinator Areas	Rolling 12 months of information provided on request.	NA
PER-002-0	All	<b>Operating Personnel Training</b>	BA, TOP	Each Transmission Operator and Balancing Authority must provide their personnel with a coordinated training program that will ensure reliable system operation.	By request training program and training records.	Yes
PER-003-0	All	<b>Operating Personnel Credentials</b>	BA, RC, TOP	Certification of operating personnel is necessary to ensure minimum competencies for operating a reliable Bulk Electric System.	By request latest certification information and present calendar year plus previous calendar year staffing plan.	Yes

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PER-004-1	All	<b>Reliability Coordination — Staffing</b>	RC	Reliability Coordinators must have sufficient, competent staff to perform the Reliability Coordinator functions.	By request – Each Reliability Coordinator shall keep evidence of compliance for the previous two calendar years plus the current year.	NA
PRC-004-1	All	<b>Analysis and Mitigation of Transmission and Generation Protection System Misoperations</b>	DP*, GO, TO	Provide trip operation / misoperation information per regional process.	By request – last 12 months of protection system Misoperation analysis.	Yes
PRC-005-1	All	<b>Transmission and Generation Protection System Maintenance and Testing</b>	DP*, GO, TO	Document/implement transmission protection system maintenance/testing/monitoring PROGRAM	By request – maintenance and testing program and testing records to show that testing intervals are on schedule.	Yes
PRC-008-0	All	<b>Implementation and Documentation of Underfrequency Load Shedding Equipment Maintenance Program</b>	DP, TO	Document/implement UFLS maintenance/testing PROGRAM	By request – maintenance and testing program and testing records to show that testing intervals are on schedule.	Yes
PRC-010-0	All	<b>Technical Assessment of the Design and Effectiveness of Undervoltage Load Shedding Program.</b>	DP, LSE, TO, TOP	ASSESS design and effectiveness of UVLS programs	By request – current assessment.	Yes

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PRC-011-0	All	<b>UVLS System Maintenance and Testing</b>	DP, TO	Document/implement UVLS maintenance/testing PROGRAM	By request – maintenance and testing program and testing records to show that testing intervals are on schedule.	Yes
PRC-016-0	All	<b>Special Protection System Misoperations</b>	DP, GO, TO	DOCUMENT/analyze misoperations	By request – last 12 months of special protection system Misoperation analysis.	Yes
PRC-017-0	All	<b>Special Protection System Maintenance and Testing</b>	DP, GO, TO	Document/implement SPS maintenance/testing PROGRAM	By request – maintenance and testing program and testing records to show that testing intervals are on schedule.	Yes
PRC-021-1	All	<b>Under-Voltage Load Shedding Program Data</b>	DP, TO	DOCUMENTATION of undervoltage load shedding program.	By request – latest UVLS data.	Yes
TOP-003-0	All	<b>Planned Outage Coordination</b>	BA, GOP, RC, TOP	Scheduled generator and transmission outages that may affect the reliability of interconnected operations must be planned and coordinated among Balancing Authorities, Transmission Operators, and Reliability Coordinators.	By request.	Yes
TOP-004-1	R6	<b>Transmission Operations</b>	TOP	To ensure that the transmission system is operated so that instability, uncontrolled separation, or cascading outages will not occur as a result of the most severe single Contingency and specified multiple Contingencies.	By request – Each Transmission Operator shall keep 90 days of historical data for Measure 1.  Each Transmission Operator shall have current, in-force policies and procedures, as evidence of compliance to Measure 2.	Yes

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TOP-005-1	All	<b>Operational Reliability Information</b>	BA, PSE, RC, TOP	To ensure reliability entities have the operating data needed to monitor system conditions within their areas.	By request.	Yes
TOP-007-0	All	<b>Reporting System Operating Limit (SOL) and Interconnection Reliability</b>	RC, TOP	Ensure SOL and IROL violations are being reported to the Reliability Coordinator so that the Reliability Coordinator may evaluate actions being taken and direct additional corrective actions as needed.	Event driven.	Yes
TPL-001-0	All	<b>System Performance Under Normal (No Contingency) Conditions</b>	PA, TPL	System performance under normal conditions.	By request – latest annual assessment.	Yes
TPL-002-0	All	<b>System Performance Following Loss of a Single Bulk Electric System Element</b>	PA, TPL	System performance under single contingency.	By request – latest annual assessment.	Yes
TPL-003-0	All	<b>System Performance Following Loss of Two or More Bulk Electric System Elements</b>	PA, TPL	System performance under multiple contingencies.	By request – latest annual assessment.	Yes

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TPL-004-0	All	<b>System Performance Following Extreme Events Resulting in the Loss of Two or More Bulk Electric System Elements</b>	PA, TPL	System performance under extreme contingencies	By request – latest annual assessment.	Yes
VAR-001-1	All	<b>Voltage and Reactive Control</b>	PSE, TOP	To ensure voltage levels, reactive flows, and reactive resources are monitored, controlled, and maintained within limits in real time to protect equipment and the reliable operation of the Interconnection.	By request – last 12 months of data.	Yes